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10/823,771	04/14/2004	Marco Apostolo	108910-00130	5340

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EXAMINER	
HU, HENRY S	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/823,771	APOSTOLO ET AL.	
	Examiner	Art Unit	
	Henry S. Hu	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Election of April 18, 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *1-13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-20* is/are rejected.

7)☒ Claim(s) *1,4,7,13,15 and 16* is/are objected to.

8)☒ Claim(s) *1-20* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3 pages*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to **Election** filed on April 18, 2006. **Applicant's election of Group III, Claims 14-20 is traversed with remarks on pages 1-2.** The traversal is on the ground(s) that it would not place an undue burden to search and examine the non-elected Group I (Claims 1-4 and 9-13) and Group II (Claims 5-8) with the elected Group III since they are so closely related in the field of perfluorodioxole-containing polymers. This is not found persuasive because each is drawn to a technology apparently requiring search in different classification area. In the instant case Group I was drawn to amorphous perfluorinated homopolymers and copolymers of perfluorodioxoles having a formula IA, Group II was drawn to **a method of polymerization** to prepare amorphous perfluorinated homopolymers and copolymers comprising perfluorodioxole monomer, while Group III was drawn to **the use** (the method of using) of amorphous perfluorinated homopolymers and copolymers comprising perfluorodioxole monomer.

2. As discussed earlier, even Group III may use the polymer made from Group II and Group II is the process of making the perfluorinated polymers of Group I, the polymerization process of Group II can be applied to make homopolymer or copolymer other than the one mentioned on Group I and/or the one used by Group III. Attention is directed to the fact that perfluorinated polymers in Group I may be used in different form such as dispersion resin in a solution or emulsion. The coating materials in Group III may comprise materially different types of

polymers, and may contain various additives. It is well known in the art that amorphous perfluorinated polymers comprising perfluorodioxole unit, particularly at dioxole content being **higher than 95 mol%**, carry some unique properties distinct from other kind of fluorinated polymers. The process of making or using is unique and thereby not interchangeable. Therefore, the scope of the claims, i.e., the metes and boundaries are distinct.

The requirement is still deemed proper and is therefore made FINAL. **Claims 1-20** are now pending with one independent claim (Claim 1), while nonelected **Claims 1-4 and 9-13** (Groups I) as well as **Claims 5-8** (Group II) are both withdrawn from consideration. An action follows.

Claim Objections

3. Claims 1, 4, 7, 13 and 15-16 are objected to because of the following informalities:

On **Claim 1** at lines 7 and 12, **Claim 4** at lines 7, 10, 13 and 23, **Claim 7** at line 3, **Claim 13** at line 3, **Claim 15** at line 3 and **Claim 16** at line 4, the term "**preferably**" is a relative term which renders the claim **improper**. The term "**preferably**" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention. See MPEP § 2173.05(b). The Examiner suggests adding the limitation on dependent claims. Appropriate corrections are required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

(A) Claims 14-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 14-20 provide for **the use of dioxole-containing fluoropolymers with particular dioxle content at least 95 mole%**, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

(B) Claims 14-20 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

(C) Claims 1,16 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 at line 14, **Claim 16** at line 3 and **Claim 19** at line 3 contains the trademark/trade name **Galden^{R} D80**. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe **the solvent perfluoroheptane** and, accordingly, the identification/ description is indefinite.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 14-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 10/835,288 (PGPUB **2004/0242820 A1**) to Arcella et al. (with the same assignee).

This is a provisional double patenting rejection since the conflicting claims have not yet been patented. Although the conflicting claims are not identical, they are not patentably distinct from each other. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

6. Copending Application No. 10/835,288 relates to **a method for preparing transparent "films" at 157 nm having a transmittance higher than 50 %**. It has all the limitations on pending Claims 14-20. For instance, (A) same type of dioxole-containing polymers are used to prepare coatings and/or films with a condition as dioxole content >/= 95 mole%; (B) same requirement is found that polymers are free of unstable ionic end groups which may be achieved through the same or similar gas treatment (see Claim 9 of current application; also see Claim 1 of 10/835,288); (C) same or similar perfluorinated solvents are used to make polymer solution for measurement; and (D) same or similar co-monomer(s) can be used for making copolymer of dioxole. It is noted that dioxole-containing fluoropolymers carries excellent optical

transparency as known in the art. Therefore, pending Claims 14-20 are ODP rejected with Claims 1-20 of 10/835,288.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. *The limitation of parent* ***Claim 14*** *in present invention relates to* ***the use*** *of the* ***amorphous perfluorinated polymers*** *as mentioned in Claim 1, so as to* ***prepare coating***. *Said perfluorinated polymers are related to homo- and co-polymers carrying* ***three required things*** *as: (A) repeating units of* ***perfluorodioxole monomers with a formula (IA)*** *with factors* X_1, X_2 *and* R'_F *as specified, (B)* ***at least 95 mol% of dioxole content****, and (C) a combination of* ***Tg and intrinsic viscosity*** *as specified. See other limitations of dependent* ***Claims 15-20****.*

10. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Navarrini et al. (US 5,646,223 or its equivalent US 5,495,028 or EP 633,257 A1).

Regarding the **use claim** limitation of parent **Claim 14, Navarrini** in each of US ("223" and "028") and EP patents discloses the preparation of thermoprocessable **homopolymer** and some TFE-containing **copolymers** to be useful for **coating electrical cables by melt extrusion** (abstract, line 1-15; column 3, line 8-20; column 4, line 15-24). Such polymers comprise repeating units from the claimed fluorinated dioxole monomer(s) with a specific formula on the abstract as: (A) R'_F being $-OR_F$ wherein R_F is C_{1-5} perfluoroalkyl radical; and (B) X_1 and X_2 are both from F or CF_3. The preparation of dioxole "**homopolymer**" is certainly reading on the required dioxole content >/= 95 mole%.

Although some glass transition temperatures are reported in working examples, Navarrini is silent of the claimed Tg (measured by ASTM 3418) and intrinsic viscosity (measured by ASTM 2857-87). In light of the fact that the prior art and the present invention recite **substantially identical polymeric composition in homo- and co-polymers comprising repeating units from the claimed fluorinated dioxole monomer(s) and may be polymerized in the same process** (see polymerization in examples 1-10 on pages 21-30 of specification; see "223" at columns 9-18), a reasonable basis exists to believe that the products of the invention inherently possess the same properties. Since the PTO cannot perform experiments, the burden is shifted to the applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP 2112-2112.02.

11. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Navarrini et al. (US 5,646,223 or its equivalent US 5,495,028 or EP 633,257 A1) in view of Grootaert (US 5,378,782) or Tortelli et al. (US 6,828,388 B2).

The above discussion of the disclosures of the prior art of Navarrini for Claim 14 of this office action is incorporated here by reference. Regarding **Claims 15-17**, Navarrini is silent about polymers are treated with fluorine gas so that the ionic end groups are completely absent in IR measurement. **Each of Grootaert and Tortelli** has specifically disclosed **direct fluorine gas treatment** can be applied to purify fluoropolymers, particularly some are with dioxole units (see Grootaert at column 5, line 45-50; see Tortelli at column 3, line 20-28. For instance, see

Grootaert at column 3, line 23-35 and see Tortelli at column 4, line 15-25. By doing so, **unstable ionic groups** (generally are not desirable because of detrimental affects on rheology) **can be substantially removed or in some cases be converted to stable non-ionic groups** (see Grootaert at column 3, line 23-35; column 2, line 25-28; also see Tortelli at column 4, line 15-16 and 32-40)

In light of the fact that all involving references are dealing with making perfluorodioxole-containing polymers with excellent optical transparency, one having ordinary skill in the art would therefore have found it obvious to **further** purify Navarrini's perfluorodioxole-containing polymer with direct fluorine gas treatment as taught by Grootaert or Tortelli. By doing so, one would expect it succeed in substantially lowering the amount of undesirable unstable ionic groups in polymers so as to obtain better and stable products.

12. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Navarrini et al. (US 5,646,223 or its equivalent US 5,495,028 or EP 633,257 A1) in view of Nemser et al. (US 5,051,114) or Bikson et al. (US 6,723,152 B2).

The above discussion of the disclosures of the prior art of Navarrini for Claim 14 of this office action is incorporated here by reference. Regarding **Claims 18-20**, Navarrini is silent about using the polymers to prepare films and membranes to be useful for gas separation. **Each of Nemser and Bikson** has specifically disclosed gas separation/purification application by using such type of perfluorodioxole-containing polymers in the form as membrane. For

instance, see Nemser at abstract, line 1-4; column 2, line 34-54. Also see Bikson at abstract, line 1-8; column 2, line 44-54. By doing so, gas enrichment can be thereby effectively achieved (see Nemser at column 1, line 10-17).

In light of the fact that all involving references are dealing with making perfluorodioxole-containing polymers in a form as free-standing film or membrane, one having ordinary skill in the art would therefore have found it obvious to apply Navarrini's perfluorodioxole-containing polymer films or membranes in the area of gas separation and/or purification as taught by Nemser or Bikson. By doing so, one would expect it succeed in gas enrichment due to the existence of perfluorodioxole units. Additionally, more diversified products may be obtained.

Conclusion

13. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu whose telephone number is (571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The **fax** number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Henry S. Hu

Patent Examiner, Art Unit 1713, USPTO

May 31, 2006

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